Meeting Date	**28 September 2021**	**Agenda Item**	**2.1**
Report Title	Healthcare Acquired Infections Update Report		
Report Author	Delyth Davies, Head of Nursing, Infection Prevention & Control		
Report Sponsor	Christine Williams, Interim Director of Nursing & Patient Experience		
Presented by	Delyth Davies, Head of Nursing, Infection Prevention & Control		
Freedom of Information	Open		
Purpose of the Report	This is an assurance report provides an update on prevalence, progress and actions for healthcare associated infections (HCAIs) within Swansea Bay University Health Board for the reporting period.		
Key Issues	• The Health Board continues to have the highest incidence of infection for the majority of the Tier 1 key infections. • COVID-19 continues to have a significant impact on healthcare services across the Health Board, with the number of COVID admissions increasing. • Adherence to best practice in infection prevention and control (IPC) precautions is critical. • The third wave of the COVID-19 pandemic has commenced. This, in addition to the escalation of service pressures, and the incidence of other respiratory viruses, and Norovirus, which are expected to increase during winter, is likely to lead to a challenge for the Health Board to achieve and sustain reductions in healthcare-associated infections. • Delivery Groups must focus on maintaining awareness of adhering to good infection prevention & control practices, including appropriate use of PPE. • COVID-19 vaccination programmes are progressing well. • The Quality Priority programme for healthcare associated infection improvement 100-day plan is progressing.		
Specific Action Required	**Information**	**Discussion**	**Assurance**	**Approval**
	☐	☐	☒	☐
Recommendations	Members are asked to: • Note reported progress against HCAI priorities up to 31 August 2021 and agree actions.			

Infection Prevention and Control Report

		Agenda Item	3.1
Freedom of Information Status		Open	
Performance Area	Healthcare Acquired Infections Update Report		
Author	Delyth Davies, Head of Nursing, Infection Prevention & Control		
Lead Executive Director	**Christine Williams, Interim Director of Nursing & Patient Experience**		
Reporting Period	31 August 2021		

Summary of Current Position

The Health Board has continued with its response to COVID-19 (SARS 2) pandemic.

COVID-19 (SARS 2):

- From 01 March 2020 to 31 August 2021: there have been over 41,000 positive cases of COVID-19 (SARS 2) from over 335,500 testing episodes.
- The chart below shows the weekly number of laboratory confirmed COVID-19 cases admitted to SBUHB hospitals, and highlights the impact of the second wave of the pandemic.

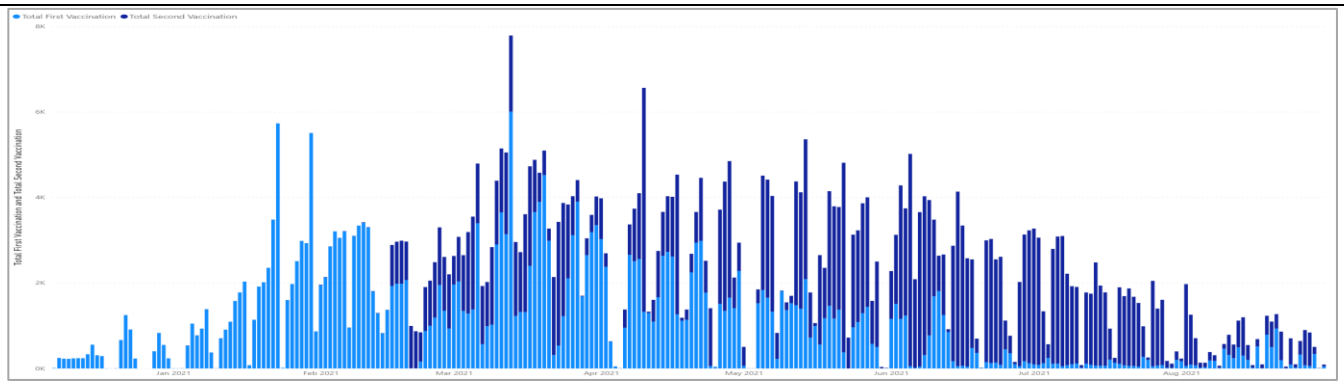
Source: Public Health Wales, to 09/09/21

- In August, there was a cluster of two cases reported in a staff group; the two shared office accommodation. Staff contacts tested negative.
- There was an outbreak identified in Singleton Admission Unit also, involving three patients. There had been a temporary lapse in admission screening, which led to a COVID-19 positive patient being unidentified, and not isolated on admission. Routine admission and ongoing testing was reinstated.
- The incidence of COVID admissions has increased.

COVID-19 Vaccination update

- A total of 285,247 first dose vaccines, and 261,920 second dose vaccinations, have been administered within the priority groups.

Vaccinations Given by Date



Source Power BI SBIHB Digital intelligence 09/09/21

- By 31 August 2021, the mobile unit 'Immbulance' had successfully delivered 2,124 first dose vaccinations, and 3,145 second dose vaccinations.
- To 31 August 2021, 16,056 SBUHB staff had received the first dose, and 15,581 staff had received the second dose of either one of the available COVID-19 vaccines; the breakdown is shown in the following table.

Vaccinations by Job Role, Frontline Status and Priority Group

Job Role Category	Cohort total	Total First Vaccination	Total Second Vaccination	% Vaccinated (1st Dose)	% Vaccinated (2 Doses)
⊞ Additional Clinical Services	155	136	131	87.74%	96.32%
⊞ Additional Prof Scientific and Technical	23	19	19	82.61%	100.00%
⊞ Administrative and Clerical	229	220	218	96.07%	99.09%
⊞ Allied Health Professionals	164	159	156	96.95%	98.11%
⊞ Estates and Ancillary	64	59	58	92.19%	98.31%
⊞ Healthcare Scientists	30	29	29	96.67%	100.00%
⊞ Medical and Dental	408	390	379	95.59%	97.18%
⊞ Nursing & Midwifery Registered	486	476	462	97.94%	97.06%
⊞ Other	1004	995	977	99.10%	98.19%
⊞ Student	372	370	359	99.46%	97.03%
⊞ Unknown	14317	13273	12966	92.71%	97.69%
Total	**17252**	**16126**	**15754**	**93.47%**	**97.69%**

- A business case is in development to provide a substantive and sustainable core immunisation and vaccination team service, which is required to meet national immunisation and vaccination goals, methods and outcomes as outlined in the Health Board's Annual Plan 2021-22 is being finalised.
- Training for non-registrant vaccinators, commences 27th September.
- Recommendations from the Joint Committee on Vaccination and Immunisation on COVID booster doses are imminent. It would be possible to co-administer the COVID booster with the flu vaccine.

<u>Flu Planning 2021/22</u>

- In terms of staff flu vaccination, the Mass Vaccination Centres will be utilised to support the administration of the vaccines to Health Board staff this year. As in previous years, the Health Board will work closely with Community Pharmacies and GP practices to support flu vaccination in other eligible groups.

Decontamination Update

Progress continues to strengthen the governance of decontamination processes across the Health Board.

- All Health Board-wide decontamination protocols have been completed.
- A scoping exercise to determine what local departmental protocols are available has taken place. The Decontamination Lead will collaborate with departments over the coming weeks to review and update these protocols to ensure they align with best practice and national guidelines.
- Compliance with annual refresher training will be monitored locally through individual performance review. Compliance figures are to be reported to the Decontamination Quality Priority group in future. This will improve governance processes and facilitate specialist support on improving compliance where required.
- Audits of each department's traceability systems are being undertaken currently. These assurance audits are in addition to local audits, which are to be completed on a quarterly basis.
- The Band 6 Decontamination Co-ordinator post will go out to advert in the third/fourth week of September.

Tier 1 Infections 2020/21

The Tier 1 infection reduction goals for 2021/22 have yet to be published. Until their publication, Health Board progress will be shown in comparison with the last published monthly targets (2019/20).

Infection	Cumulative cases Apr 2021-August 2021	August 2021 Cases	Cases +/- Monthly WG Expectation	WG Monthly Expectation
C. difficile	90	22	+14	< 8 cases
Staph aureus BSI	58	12	+6	< 6 cases
E. coli BSI	148	34	+13	< 21 cases
Klebsiella BSI	37	8	+2	< 6 cases
Ps. aeruginosa BSI	9	2	=	< 2 cases

Infection	2020/21 total to 31/08/20	Comparison 2021/22 Total to 31/08/21
C. difficile	81	90 (11%↑)
Staph aureus BSI	46	58 (26% ↑)
E. coli BSI	102	148 (45% ↑)
Klebsiella BSI	36	37 (3% ↑)
Ps. aeruginosa BSI	11	9 (18% ↓)

The incidence of the majority of the key Tier 1 infections in Swansea Bay University Health Board is the highest in Wales. This is not an acceptable position. All major Health Boards in Wales appear to be facing similar challenges.

To provide context to the position in Wales, during the first five months of the financial year, NHS Wales has seen an average increase in all Tier1 infections as shown below (with the range of increases across various Health Boards shown in brackets):

- *C. difficile*: +23% (range -3% to +94%);
- *Staph. aureus* bacteraemia : +10% (range -19% to +33%);
- *E.coli* bacteraemia: +22% (range +10% to +45%);
- *Klebsiella spp*. bacteraemia: +4% (range -18% to +44%); and
- *Pseudomonas aerugin*osa bacteraemia: +14% (range -18% to +100%).

A recent online published paper (03 September 2021, Infection Control & Hospital Epidemiology), reported that prior to the COVID-19 pandemic, widespread reduction in healthcare-associated infection had been reported. However, during the pandemic, there had been increased incidence of healthcare-associated infections in Quarter 2, 2020/21, rising significantly in Quarters 3 and 4. The authors acknowledged limitations to their study, but suggested that the COVID-19 pandemic placed significant burden on acute hospitals, which …

> "…may have altered staffing practices, increased critical care capacity, and modified use of personal protective equipment (PPE)."

These pressures, including staff shortages, were seen across NHS Wales during the pandemic, and particularly so during the second wave, as the NHS attempted a recovery to normal services.

The Health Board will participate in a Public Health Wales-led review exploring the relationship between COVID-19, secondary bacterial infections, and *C. difficile*. The Health Board awaits confirmation from PHW regarding the commencement of this review. Other Health Boards are being recruited to participate in the review, as there is benefit in having a large-scale dataset to enable statistically valid conclusions to be drawn. Time-frames have yet to be agreed by Public Health Wales. However, the sub-groups of the All Wales *C. difficile* Focus Group has identified have been identified six sub-groups and nominations have been requested from each Health Board. The Health Board Infection Prevention & Control team and Antimicrobial Pharmacists will participate in these groups.

E. coli bacteraemia rates attributable to SBUHB continue to be of concern. During April to August 2021, a 45% increase in positive cultures has been reported compared with the same period in 2020. The incidence of *E. coli* bacteraemia has also continued to increase across NHS Wales. In SBUHB, approximately 68% of the cases in April to August 2021 were community-acquired infections (with a 40% increase year-on-year in community-acquired cases). Of these community-acquired cases, the urinary tract was considered the source of infection in approximately 50% of cases, and the hepato-biliary tract considered the source in approximately 23% of cases.

Fifty-one percent of *Klebsiella spp*. bacteraemia cases between April and August 2021 were community-acquired cases. Compared with all Health Board cases in 2020/21, there has been an increase in the proportion where the urinary tract was considered the source of infection (increased from 27% to 35%). In community-acquired cases, the proportion where the urinary tract was considered the source of infection increased from 33% in 2020/21 to 53% in 2021/22.

The third wave of the COVID-19 pandemic has commenced. This, in addition to the escalation of service pressures, and the incidence of other respiratory viruses, and Norovirus, which are expected to increase during winter, is likely to lead to a challenge for the Health Board to achieve and sustain reductions in healthcare-associated infections.

Achievements

- The IPC service continues to provide support, advice and training to clinical and non-clinical staff across all Health Board services in all issues relating to COVID-19 and other infections. The IPC team continues to emphasise to staff the need for sustained vigilance.
- The Nosocomial Transmission Silver Group continued to meet during the second wave of COVID-19, and continues to review risks and mitigation.
- The care home IPCN project aims to establish a programme of work for infection and prevention control (IPC) support to care homes within the Health Board boundaries, which will enable better sharing of issues, problem-solving, best practise and learning for all the various partners involved in infection prevention and control for care homes, including the care homes themselves.
- Health Board is in the process of rolling out ESR Supervisor Self-service, which would provide units and services the ability to view and update learning and competencies. The current service constraints and staffing may affect the speed of rollout.

Antimicrobial achievements:

- A series of Cluster-based antimicrobial quality improvement projects agreed, with support provided from the quality improvement team.
- Introduction of a pilot of weekly MDT (microbiology/pharmacy) antimicrobial stewardship in Singleton hospital, utilising HEPMA to identify patients on broad-spectrum antibiotics.
- A draft Antimicrobial Stewardship framework and proposed structure has been presented to the Clinical Outcome and Effectiveness Group (COEG) with an aim to agree at the next meeting (October). The aim is to achieve improved engagement of medical colleagues.
- The initial cluster-based focus on 4C (broad-spectrum antibiotics) has been completed. Gaps in primary care antimicrobial guidelines identified and added to work plan for guideline development. Audit findings will be presented back to all GP practices as good practice points in the antimicrobial focused prescribing leads sessions planned for this autumn. Monitoring of prescribing data for the cluster will continue and a re-audit undertaken in 6 months' time.
- Junior-doctor led antimicrobial quality improvement projects have been launched. A large number of trainees have been recruited and trained; support will continue be provided for the projects over the next 4 months. Completed projects will be reviewed and successful interventions highlighted and spread.
- Updates to the secondary care antimicrobial guidelines in order to minimise the use of broad-spectrum antibiotics have been completed. Focus going forward will be on education regarding the changes.

Challenges, Risks and Mitigation

- The Health Board did not achieve the infection reduction goals expected by Welsh Government.
- It is unknown currently what the Welsh Government infection reduction expectations will be for 2021/22.
- Current pressures on Health Board services, both in the community and in hospitals, is extreme, as are the pressures on providing social care packages. The results of these pressures are that numbers of medically fit for discharge patients have increased, which results in increased length of stay for many patients. The demand for unscheduled acute care remains, leading to increased demand for inpatient beds. Surge capacity is being utilised on all inpatient sites. The increasing inpatient population occurs at a time of increased staff shortages, which an increasing patient-to-staff ratio. In addition, the number of COVID-19 admissions has been increasing, leading to provision of increased COVID beds

across sites, particularly in Morriston. When such pressures exist within a healthcare system, patient safety risks are likely to increase, and this includes infection risks.

- COVID-19 continues to circulate within the Community. Symptoms may be minimal or absent in the doubly vaccinated population who may continue to be sources of infection to others, including within the hospital environment. The potential consequences to disruption of services is likely to be significant.
- Frequent movement of patients within the hospital settings Increases infection risks. Pressures on inpatient capacity historically has increased the movement of patients between wards in the attempt to maintain patient flow and service provision for unscheduled care.
- The current Immunisation team has one WTE substantive Immunisation and Vaccination Lead. The current secondment post has been extended to the end of December, whilst a business case for additional resources is developed further.
- Historically, infection reduction initiatives have been compromised by the following: staffing vacancies, with reliance on temporary staff; over-occupancy because of increased activity; use of pre-emptive beds; and increased activity such that it is not possible to decant bays to clean effectively patient areas where there have been infections.

Action Being Taken (what, by when, by who and expected impact)

Maintain infection Prevention & Control Support for COVID-19

- **Action:** Continue to provide support and advice in relation to COVID-19 for clinical and non-clinical staff across the Health Board, and Procurement. **This will be ongoing throughout the third wave, which has commenced. Lead:** Head of Nursing IP&C. **Impact:** Safe practices to protect the health of patients, staff and wider public.

Immunisation & vaccination.

- Action to develop a business case for a sustainable Vaccination & Immunisation Service to improve the uptake of vaccinations against Influenza and other preventable communicable diseases. **Target compete ion date 30/09/21. Lead:** Matron Immunisation, Vaccination & Assistant Director of Nursing**. Impact;** reducing preventable communicable disease.

Development of ward dashboards key infections (HCAI Quality Priority 1, 100 Day Plan)

Working with Digital intelligence to identify specification for the infection dashboard.

- **QP Action 1:** In collaboration with Digital Intelligence team, identify the specification for infection information acquisition from Laboratory information System. **Target completion date: 31/10/21. Lead:** Head of Nursing Infection Prevention & Control, and Business Intelligence Information Manager. **Impact:** enable oversight of key indicators at Ward, Specialty, and Delivery Unit and Board level to enable early intervention and improve patient safety.

Achieve compliance with Infection Prevention-related training (HCAI Quality Priority 2, 100 Day Plan)

- **Action 2.2:** Service Groups to develop improvement plans for IPC training compliance. **Target completion date:** This is dependent on roll out of ESR Supervisor Self Service. **Lead:** Workforce Project Manager and Service Group Directors. **Impact:** Improve compliance with IPC training for all Service Group staff. Requires Manager Self Service Module of ESR.

Recruitment of key personnel to support delivery of Decontamination and AMR improvement programmes (HCAI Quality Priority 3, 100 Day Plan) – dependent on confirmation of resources and recruitment processes.

- **Action 3.1:** Appointment of Band 6 for Decontamination. **Target completion date:** set back to 30.11.21, as post advert went live only on 14.09.21. **Lead:** Decontamination Lead IP&C. **Impact:** Support programmes for ensuring robust processes for decontamination of medical devices, with appropriate governance framework.
- **Action 3.5:** Resourcing for General Practitioner sessions dedicated to antimicrobial stewardship improvement. **Target completion date: 31/10/21**. **Lead:** Medical Director Primary Care and Community. **Impact:** Drive forward antimicrobial stewardship improvement programmes in Primary Care, and improve compliance with key antimicrobial stewardship indicators.

Drive Improvements in Prudent Antimicrobial prescribing *(HCAI Quality Priority 6 & 7, 100 Day Plan)*

Antimicrobial initiatives – Secondary Care

- **Action 6. Action:** Junior-doctor led antimicrobial quality improvement projects have been launched. A large number of trainees have been recruited and trained, support will continue be provided for the projects over the next 4 months. **Target Completion date:** Quarter 4 2021/22. **Lead:** Antimicrobial Pharmacist **Impact:** Increase awareness amongst junior doctors around "Start smart then focus", the gold standard approach to antibiotic prescribing and directly involve prescribers in the improvement work. Completed projects will be reviewed and successful interventions highlighted and spread.

- **Action 7. Action:** Education and training sessions to highlight the changes in the secondary care antimicrobial guidelines to minimise use of broad-spectrum antibiotics. **Target completion date:** Quarter 3, 2021. **Lead:** Consultant Antimicrobial Pharmacist **Impact:** Decrease prescribing of broad-spectrum antibiotics that are high risk for *C.difficile* and antibiotic resistance.

***Clostridioides difficile* infection**

- **Action:** Digital Intelligence are developing an electronic investigation tool to allow MDT input and improve scrutiny and identification of themes by HB *C. difficile* Scrutiny Panel. **Target completion date:** draft of first stage developed. Additional development required, and date extended to 30/11/21. **Lead:** Quality Improvement Matron IPC, Public Health Wales Infectious Diseases/Microbiology Consultant. **Impact:** More robust system to collate themes and shared learning to improve the focus of prevention and management initiatives, leading to a reduction in *C. difficile* infection.

Bacteraemia improvement

- **Action:** Morriston Service Group's Medical Director has established a Consultant-led bacteraemia group, with multi-disciplinary representation, including a Public Health Wales Microbiologist, to review investigations of significant bloodstream infections and share lessons learned. **Target completion date:** group meeting dates set through 2021/22. **Lead:** Morriston Hospital Service Group Directors. **Impact:** reduction in significant bloodstream infections and share methodologies across the Health Board.

Domestic staff recruitment

- **Action:** Recruitment process for additional cleaning staff progressing. **Target completion date:** Recruitment is ongoing process to meet possible shortfalls that occur through vacancies caused by retirement or staff leaving for alternative job opportunities. **Lead:** Support services manager. **Impact:** Increased domestic staffing to provide cleaning hours required.

Decant

- **Action:** The feasibility including a decant facility in Morriston will form part of a capital plan for Morriston, aimed at minimising infection prevention & control risks. **Target completion date:** *currently deferred due to COVID and service pressures.* **Lead:** Assistant Director of Strategy Capital, Service Director Morriston.

Financial Implications

A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is **£7,000** (the cost of MSSA bacteraemia could be less due to the availability of a wider choice of antibiotics). In an NHS Improvement indicative tool, the estimated cost of an *E. coli* bacteraemia is between **£1,100** and **£1,400**, depending on whether the *E. coli* is antimicrobial resistant. (*Trust and CCG level impact of E.coli BSIs* accessed online at: https://improvement.nhs.uk/resources/preventing-gram-negative-bloodstream-infections/).

Estimated costs related to healthcare associated infections, from 01 April 2021 – 31 August 2021 is as follows: *C. difficile* - £900,000; *Staph. aureus* bacteraemia - £406,000; *E. coli* bacteraemia - £174,500; therefore a total cost of £1,480,500.

Recommendations

Members are asked to:

- Note reported progress against HCAI priorities up to 31 August 2021 and agree actions.